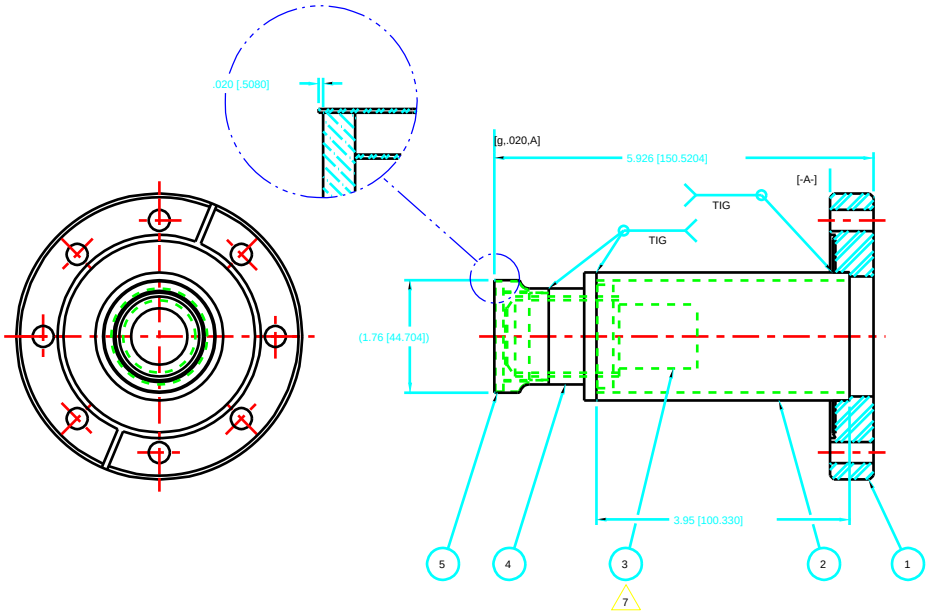

NOTE:

1. THIS IS A ULTRA-HIGH VACUUM ASSEMBLY (UHV).

2. WHEN MACHINING VACUUM PARTS, USE OF SILICONE AND SULPHUR-BASED CUTTING FLUIDS IS PROHIBITED. USE ONE OF THE FOLLOWING:
   A) CIMCOOL 5 STAR 49
   B) TRIM COL

3. ELECTROPOLISHING IS NEEDED BEFORE WELDING. PRIOR TO ELECTROPOLISHING, CLEAN PROCESS INVOLVING DEGREASING, WASHING AND DRY NITROGEN BLOW DOWN.

4. WELD SHALL BE GAS TUNGSTEN ARC (GTAW) OR TUNGSTEN INERT GAS (TIG) ON VACUUM SIDE OF JOINTS.

5. VACUUM CHAMBER SHALL BE LEAK TESTED USING A MASS SPECTROMETER WITH MINIMUM SENSITIVITY FOR HELIUM OF 2 x 10^{-10} STANDARD CC/SEC PER LEAK METER DIVISION, SUCH AS:

   ALCATEL ASM-110TCL
   VARIAN NCR 925 OR 936
   VEECO MS-9, MS-90 OR MS-18
   DuPONT CEC 24-120B

   CALIBRATION OF THE LEAK DETECTOR SENSITIVITY SHALL BE PERFORMED JUST PRIOR TO TESTING.

   FINAL TEST WILL CONSIST OF SURROUNDING THE CHAMBER (BAGGING) WITH HELIUM. THE CHAMBER WILL BE REJECTED IF A 2% DEFLECTION IN THE MOST SENSITIVE RANGE OF THE LEAK DETECTOR IS SENSED WITHIN 1 MIN.

6. ALL DIMENSIONS IN [ ] ARE MILLIMETERS AND ARE FOR REFERENCE ONLY.

7 SENSOR 3 SUPPLIED BY ARGONNE NATIONAL LABORATORY.

PARTS LIST

ITEM	DWG. & ELECTRONIC FILE No.	NOMENCLATURE OR DESCRIPTION	MATERIAL / SPEC	QTY
5	PURCHASE	VIEWPORT STANDARD LENGTH QUARTZ	ISI #9721000	1
4	P4102010108-220001	S1 BUSHING	SST 304	1
3	PURCHASE	SENSOR, HAZARDOUS LOCATION PROXIMITY PK80242 SERIES	HONEYWELL	REF
2		TUBING 2.00 O.D. x .125 WALL x SEE DWG.	SST 300 SERIES	1
1	P4102010108-220002	S1 FLANGE MODIFIED	SST 304	1

SYM	CHANGE DESCRIPTION	BY	CHKD	DATE

REVISIONS

UNLESS OTHERWISE SPECIFIED:
ALL DIMENSIONS ARE IN INCHES
TOLERANCES
DECIMALS ANGULAR
.X ± .015 ± .5°
.XX ± .010
.XXX ± .005
SURFACE ROUGHNESS 250
REMOVE ALL BURRS AND BREAK SHARP EDGES .03 MAX.
SURFACE TEXTURE TO BE IN ACCORDANCE WITH LATEST ANSI B46.1
DIMENSIONING & TOLERANCING IN ACCORDANCE WITH LATEST ANSI Y14.5
DO NOT SCALE DRAWING

ELECTRONIC FILE NUMBER: A08724

THIS DRAWING IS THE PROPERTY OF
ARGONNE NATIONAL LABORATORY

DRAWN BY	RICK KRAKORA	DATE	12/92	CHIEF DESIGN ENGINEER	D.SHU	DATE	8/11/93
CHECKED BY	T. SANCHEZ	DATE	8/11/93	GF LEADER	T. KUZAY	DATE	8/11/93
DESIGNER	RICK KRAKORA	DATE	12/92	PROJECT MGR		DATE	
RESPONSIBLE ENGINEER	T. SANCHEZ	DATE	8/11/93	APPROVED/RELEASED		DATE	

TITLE: ADVANCED PHOTON SOURCE
S1 SAFETY SHUTTER
PROX-SWITCH ASSEMBLY

MATERIAL: SEE B.O.M.
SCALE: 1=1
SHEET: 1 OF 1
SIZE: D
DRAWING NUMBER: P4102010108-220000-00

PLOT SCALE: 1=1